

CLAIMS

1. A method for operating a radio telecommunications system comprising a mobile station and one or more cell site units capable of communicating by radio with the mobile station on at least two communication channels; the method comprising:

the mobile station receiving signals on each of the communication channels; and

the mobile station determining an estimate of the level of interference with signals on each of the communication channels.

2. A method as claimed in claim 1, comprising the step of transmitting to the mobile information specifying the communication channels.

3. A method as claimed in claim 2, wherein the said information specifies a frequency for each of the communication channels.

4. A method as claimed in claim 3, wherein the said step of receiving comprises receiving signals on communication channels whose carrier frequencies are specified by the said information.

5. A method as claimed in any preceding claim, comprising the step of the mobile station transmitting to a cell site unit information indicating the estimated levels of interference with signals on at least two of the communication channels.

6. A method as claimed in any preceding claim, wherein the mobile station is in traffic communication on a traffic communication channel, the telecommunications system comprises a handover controller for controlling handover of the mobile station from the current communication channel to another one of the communication channels, and the method comprises the steps of:

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the mobile station communicating to the handover controller via the current cell site unit information indicating the estimated levels of quality with signals on at least two of the communication channels; and

the handover control unit determining to which of the cell site units to hand over traffic communication of the mobile station on the basis of at least that information indicating the estimated levels of interference.

7. A method as claimed in claim 6, wherein the step of the handover control unit determining comprises determining to which communication channel of one of the cell site units to hand over traffic communication of the mobile station on the basis of at least that information indicating the estimated levels of interference.

8. A method as claimed in claim 7, wherein the handover control unit determines to hand over to a channel having one of the lowest estimated levels of interference.

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9. A method as claimed in any of claims 1 to 8, wherein the mobile station stores an indication of a timing of the said signals on at least one of the communication channels and the mobile station interrupts another operation to receive the said signals at a time dependent on the stored indication of a timing.

10. A method as claimed in claim 9, wherein the indication of a timing is an indication of the difference in timing between signals on the said communication channels.

11. A mobile station for operation in a telecommunications system comprising at least two cell site units each capable of communicating by radio with the mobile station on at least two communication channels having different frequencies; the mobile station comprising:

a receiver capable of receiving signals from a cell site units on a communication channel;

an interference estimation unit for estimating the level of interference on a communication channel on which the receiver receives signals; and

a channel analysis unit coupled to the receiver and the interference estimation unit for causing the receiver to receive signals from each of the cell site units on each of the respective communication channels in turn and receiving from the interference estimation unit an estimate of the level of interference on each of those channels.

12. A mobile station as claimed in claim 11, wherein the interference estimation unit is capable of estimating the level of interference by performing an error correction and/or signal recovery operation on received signals

13. A mobile station as claimed in claim 12, wherein the said operation is performed on a training sequence of the received signals.

14. A mobile station as claimed in claim 12 or 13, wherein the interference estimation unit comprises a Viterbi equaliser.

15. A mobile station as claimed in any of claims 11 to 14, wherein the channel analysis unit is capable of receiving via the receiver information specifying the said communication channels.

16. A method for operating a radio telecommunication system comprising a mobile station and one or more cell site units capable of communicating by radio with the mobile station on at least two communication channels; the method comprising:

the mobile station storing an indication of the timing difference between signals on the communication channels;

the mobile station receiving signals on one of the communication channels; and

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the mobile station interrupting said receiving in order to receive signals on another of the communication channels at a time dependent on the stored indication.

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